APPENDIX B: HULL SURVEY

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June 26, 2020

Marine Survey
MV LIGHTNING

VESSEL	: M/V LIGHTNING
OFFICIAL NO.	: 1048476
DOC. OWNER	: Massachusetts Bay Transportation Authority
LENGTH	: 75.8' (registered)
BREADTH	: 27.6'
HULL DEPTH	: 8.5'
GROSS TONS	: 70 (regulatory)
GROSS TONS	: 141 (ITC)
NET TONS	: 47 (regulatory)
NET TONS	: 54 (ITC)
PROPULSION	: Twin diesel water jet
BUILT	: 1996 / Gladding-Hearn Shipbuilding, Somerset, MA / Hull # P-308

THIS IS TO CERTIFY THAT the we did, on October 25 and November 1, 2019, at the request STV corporation, begin surveying the M/V LIGHTNING to provide a report detailing our findings.

This report is based upon our preliminary findings from three (3) visits to the MV LIGHTNING. Due to the limited time available, the scope of this report is limited the two (2) individual hulls and superstructure of the M/V Lightning. This inspection included general notations, moisture readings and hull soundings.

We were tasked with conducting a survey on "one MBTA vessel (FLYING CLOUD or LIGHTNING)".We conducted a survey on the MV LIGHTNING, however, due to the availability of the vessels the Thermal Imaging survey was conducted on the MV FLYING CLOUD. The information in this report applies to our findings on the MV LIGHTNING.

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Surveys were carried out on the MV LIGHTNING while dry docked at Rose's Marine in Gloucester, Ma. and while afloat at the Fore River Shipyard in Quincy, MA.

DESCRIPTION/GENERAL ARRANGEMENT

The LIGHTNING is an 88' high speed catamaran passenger ferry of composite hull construction. The welded aluminum superstructure spans both hulls and is mechanically fastened to transverse beams that connect the hulls.

Each hull pontoon contains five (5) compartments, separated by four (4) transverse watertight bulkheads, being: the forepeak, the # 2 void, the fuel tank void, the engine room, and the jet room/lazarette.

The main deck finds bow loading forward, followed by enclosed passenger space, with fixed seating and pedestal tables, followed by a large beverage service bar aft, with toilet facilities aft port and starboard sides.

An open aft crew space for line handling and jet room entry is accessed through a rear centerline window in the beverage service bar, to a transverse walkway.

The second deck finds the pilothouse all the way forward, followed by a sheltered passenger space with fixed seating, followed by an open passenger deck aft, with fixed seating.

The vessel was built at Gladding-Hearn Shipbuilding, Somerset, MA in 1996, as Hull # P-308.

EXTERIOR HULLS ABOVE & BELOW THE WATERLINE

Hull construction is of the composite type, with Kevlar fibers and S-glass resin sandwiching Divinycell core for strength.

The exterior hulls were inspected with the use of a Tramex moisture meter and followed by thorough testing by the "percussion" method of the entire external hull structures with the exception of the port bow area that was undergoing fiberglass repair at the time of inspection.

Starboard Hull

Outboard: Higher than normal moisture readings were noted from the stem moving aft from approximately 30'. Fifteen feet aft of the transducer shows higher moisture levels on the topsides with the bottom in the normal range. However, in most areas from the chine down to the keel showed slightly higher levels of moisture which could be attributed to moisture in the several layers of bottom paint.

Inboard: Higher than normal moisture readings were noted from the stem moving aft for approximately 30'. Crazing of the gelcoat is noted the length of the hull above the waterline to the deck. Higher than normal readings where noted around the thru hull located approximately 6.5 feet from the stern. Other spots with elevated moisture readings where noted 22.5', 45' and 54' from the stern. In most areas from the chine down to the keel showed slightly higher levels of moisture which could be attributed to moisture in the several layers of bottom paint.

Port Hull

Outboard: At the bow moving towards the stern for approximately 30' showed higher levels of moisture, which is consistence for both hulls. Other areas of elevated moisture were present from the port quarter towards the bow for approximately 9' and again from 22' to 35' from the stern quarter. In most areas the chine down to the keel showed slightly higher levels of moisture which could be attributed to moisture in the several layers of bottom paint.

Inboard: The bow shows moisture towards the stern for approximately 30'. Crazing of the gelcoat is noted the length of the hull above the waterline to the deck. Moisture was also noted from the stern quarter from the 7' mark to the 14' mark and at the 33' foot marks a 1' x 3' area near the chine exhibited higher moisture readings. In most areas the chine down to the keel showed slightly higher levels of moisture which could be attributed to moisture in the several layers of bottom paint.

Transoms

The transoms on both hulls sounded well and did not show elevated levels of moisture.

General

In addition to the crazing and spider cracks on the inboard hulls there are minor dings located on the hulls which would be expected with a vessel of this age.

The vessel thru-hull fittings exhibit signs they need re bedding and with possible delamination of the fiberglass in the immediate area around the thru-hull.

RESILIENT MOUNTS

The Resilient mounts are difficult to inspect. However, they are an integral of the vessel and should be removed, inspected, and/or replaced as noted in the recommendation section of this report.

INTERNAL HULLS

An inspection of the internal hulls was performed, and the interior walls exhibit staining due to levels of water intrusion via the fastener locations where the aluminum superstructure meets the composite hulls.

Both port and starboard aft inner hull compartment bilge spaces exhibit levels of environmentally friendly oil indicating a leaking hydraulic line. The port and starboard most forward voids contain water consistent with the deck hatches leaking. The starboard most forward void has water saturated/rotten plywood at the base of the ladder.

SUPERSTRUCTURE AND WEATHER DECKS

The superstructure was visually inspected, and most external painted vertical surfaces exhibit flaking paint and requires refinishing. There is loose worn nonskid finish in several areas of the exterior deck surfaces.

The aft door behind the snack bar has a loose window section that requires refastening.

The aft deck area above the water jets has bent grating that requires repair or replacement.

The starboard aft shore power receptacle has two missing fasteners that should be replaced.

The port and starboard heads at the aft end of the vessel have missing light fixture components.

When exiting the port side door there is deteriorated aluminum plating at the base of the aft vertical wall. The non-skid deck surface at the starboard entryway is worn. The interior carpeting exhibits heavy wear.

The section of starboard forward deck is bent in an upward direction and is corroded.

The hailer speaker located at the forward end of the vessel is broken.

The port forward railing has been re-welded several times.

The top deck non-skid finish is worn at the seating area.

The port pilot house door exhibits corrosion.

RECOMENDATIONS

1. Remove the fasteners securing the superstructure to the composite hulls and inspect for deterioration. Reseal the surfaces between the composite hulls and superstructure and install new fasteners.

2. Locate and repair the environmentally friendly hydraulic leaks at the port and starboard aft inner hull compartments.

3. Remove the ceiling panels and insulation in both engine spaces and inspect the main deck plating above.

4. Refinish all exterior painted areas.
5. Install/apply new non-skid finish at all required areas.

6. Repair the aft window behind the snack bar.

7. Repair or replace the damaged transverse grating at the stern of the vessel.

8. Properly fasten the starboard aft shore power receptacle.

9. Replace the light fixtures servicing the aft port and starboard heads.

10. Replace the deteriorated aluminum plating outside the port aft door.

11. Replace all interior carpet.

12. Inspect the condition of the deck plating following the removal of the carpeting.

13. Repair the impact damage at the starboard bow/forward deck area.

14. Replace the damaged hailer speaker.

15. Replace the railings at the port and starboard bow areas.

16. Repair or replace the port side pilothouse door.

17. Reseal all watertight deck hatches.

18. Re-bed all through hull fittings.

18. Replace the deteriorated standing platform at the base of the ladder in the starboard forward inner hull compartment.

THERMAL INFRARED SURVEY

Marine Safety Consultants, Inc. conducted the above survey using moisture readings, hull soundings, visual inspection, and general condition notations.

As part of our contracted task, we sought the services of Mark Ashton from Independent Marine Systems to conduct “Thermal Imaging” of the hulls on the vessel provided by the MBTA. Our

survey was conducted on the MV LIGHTNING and his thermal imaging findings were conducted on the MV FLYING CLOUD while dry docked at Rose's Marine in Gloucester, MA

Thermal imaging is a non-contact method in which the radiation pattern of an object is converted into a visible image called thermal image or thermogram. All the objects at temperature above absolute zero (−273 °C) emit infrared radiation. The infrared band with wavelength from 3 to 14 μm is called thermal infrared region. This is used in imaging applications that uses heat signatures. Thermal imaging maps the surface temperature of any object with high thermal and spatial resolutions.

Please find the "Thermal Infrared Survey" conducted by Independent Infrared Systems attached.

DISCLAIMER/DISCLOSURE

In accepting this report, it is understood that the survey was performed without warranties as to the condition, seaworthiness, or marketability of the vessel and without a title search to determine whether there are any liens or encumbrances. To the best of our knowledge and belief, the statements contained in this report are true and accurate.

The report, analysis, opinions, and conclusions are limited only by limiting conditions and represent our personal unbiased professional analysis, opinion, and conclusion. The undersigned has no present or prospective interest in the vessel that is the subject of this report and have no personal interest or bias with respect to any of the parties involved.

Compensation for this survey is not contingent upon the reporting of a pre-determined value that favors anyone using this report, and the amount of the value estimated has not been pre-determined and is not based on the fee associated with this assignment.

This report is based on examination of the vessel, and of those parts, spaces and equipment that could be sighted without removals or operation and is rendered without bias or prejudice. In accepting same, it is agreed that the extent of obligation of this surveyor, with respect thereto, is limited to furnishing a competent survey, and in the making of this report, this surveyor is acting on behalf of the person or firm requesting same and no liability shall attach to this surveyor, for the accuracy, errors and/or omissions therefore.

Naval architecture and marine engineering analysis as usually performed in the design stage of the vessel's construction were not part of this survey and typical subjects such as adequacy of stability and seakeeping were not within the scope of this survey.

Submitted without prejudice,
MARINE SAFETY CONSULTANTS, INC.

Christopher R. MacDougall
Marine Surveyor

Submitted without prejudice,
MARINE SAFETY CONSULTANTS, INC.

Thomas E. Bosworth
Marine Surveyor / General Manager

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June 15, 2020

TO: Tom Bosworth
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Thermal Infrared Survey

Inspection of the Hull

M/V FLYING CLOUD
80' 1996 Boston Harbor Catamaran Ferry

This is to certify that the undersigned surveyor at the request of Chris MacDougall of Marine Safety Consultants did attend the M/V Flying Cloud, while out of the water at Rose Marine, Gloucester, MA, USA on April 15, 25, 2020 to conduct a Thermal Infrared Survey of the vessels hulls. Reported as follows:

This report is for the exclusive use of Tom Bosworth of Marine Safety Consultants and is presented in good faith and represents the condition of the vessel as then found. The undersigned assumes no responsibility for any defects and is to be held harmless for conditions subsequently arising. This report does not warrant, expressly or implied, or guarantee the condition of M/V Flying Cloud. The undersigned is not responsible for any incidental, special or consequential damage of any kind in reliance on, arising from or in connection with third party use of this report.

Attending: Mark Ashton, Independent Marine Systems
Cameron Ashton, Independent Marine Systems
Alex Ashton, Independent Marine Systems
Nick Ashton, Independent Marine Systems

Inspection Procedure

The vessel was inspected using Thermal Infrared Imaging technology. The infrared spectrum is able to show a multitude of characteristics that are invisible to the naked eye. The vessel's hull was examined for thermal patterns indicative of delamination, voids, disbonding and moisture ingress. Areas of concern are noted in this report. The vessel was examined as accessible.

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Naval architecture and engineering analysis were not part of this survey. It is not the intent of this report to provide repair recommendations and instructions.

No warranty is made regarding the classification or regulatory status of this vessel. All details reported or believed to be correct regarding the regulatory status of the vessel can only be confirmed directly by the certifying authorities.

The information contained in this report concerning sizes, accuracy of construction, ratings capacities and speeds was ascertained from marker plates, logs, documents, plans, and certificates on board. Unless specifically noted otherwise none of the information was ascertained by direct measurement or calculation and although all the information contained is believed to be correct the accuracy thereof is in no way guaranteed.

This report carries no warranty regarding ownership or warranty regarding outstanding mortgage, charges, liens or any other debt there may be on the vessel.

Acceptance and use of this report by the client acknowledges the client's understanding that the report has been composed of information that is believed to be true after reasonable investigation and inquiry but is not warranted to be so.

Acceptance and use of this report acknowledges the client's understanding that no determination of stability or structural strength has been made and no opinion is expressed.

Acceptance and use of this report acknowledges the client's understanding that Independent Marine Systems LLC does not accept any responsibility for damage or deterioration not found or discovered during the course of survey, nor for consequential damage, deterioration or loss due to any error or omission.

The Client hereby undertakes to keep the Surveyor/Consultant and its employees, agents and subcontractors indemnified and to hold them harmless against all actions, proceedings, claims, demands or liabilities whatsoever or howsoever arising which may be brought against them or incurred or suffered by them, and against and in respect of all costs, loss, damages and expenses (including legal costs and expenses on a full indemnity basis) which the Surveyor/Consultant may suffer or incur (either directly or indirectly) in the course of the services under these Conditions.

Notwithstanding the above clause, in the event that the Client proves that the loss, damage, delay or expense was caused by the negligence, gross negligence or willful default of the Surveyor/Consultant aforesaid, then, save where loss, damage, delay or expense has resulted from the Surveyor's/Consultant's personal act or omission committed with the intent to cause same or recklessly and with knowledge that such loss, damage, delay or expense would probably result, the Surveyor's/Consultant's liability for each incident or series of incidents giving rise to a claim or claims shall never exceed a sum calculated on the basis of ten times the Surveyor's/Consultant's charges.

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DETAILS

Name:	Flying Cloud
Builder:	Hulls: Concordia Custom Yachts Assembly: Gladding-Hearn Shipbuilding
Flag / Documentation:	USA, #1047743
Model:	80’ Catamaran Ferry
LOA:	80’ reported, 76’ by documentation
Beam:	Not known
Draft:	Not Known
Built:	1996 by documentation
HID:	Not known
Inspection:	General Inspection of vessel hull.
Location:	Vessel located out of the water outside on a railway/syncrolift
Conditions:	Ambient temperature of 60-65 F with low humidity
Method:	Evaluated with a Flir T300 Digital Thermal Infrared Camera.

NOTES:

The infrared images in this report are a sample of the areas inspected. A large number of still images, video and on location data were analyzed to arrive at our conclusions. Should any questions arise in interpreting these images please contact the undersigned Marine Surveyor and Thermographer.

It is not the intent of this report to itemize any concerns as seen with the naked eye.

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The images in this report may have lines drawn on them to help visualize the extent of or to mark an area, but are approximate in size and location. All measurements in this report are approximate.

When seen in the thermal infrared spectrum a vessel constructed with a monolithic type or cored type of material is generally seen without anomalies and is consistent throughout the monolithic or cored areas. An anomaly seen in the infrared spectrum may represent several things.

I am in receipt by email from Brenda M. Christner of STV three previous reports.

1. Pedrick Yacht Design. Report of Damage assessment Hull scantling review and approval of repair procedures for the Boston harbor Catamaran ferry "Flying cloud". Dated 2/23/2007.
2. Independent Marine Services Appraisal Report Lightning and Flying cloud. Dated 2/26/2002.
3. Seaworthy Systems. Findings report for shipyard repairs to M/V Flying cloud and M/V Lightning. Dated 4/27/2007.

This report was delayed due to complications with the 2020 Pandemic COVID 19.

REMARKS

The vessel was found to have previous repairs done. Some have been documented and others have not.

The discovery of potential moisture ingress to the core in areas of the vessel should be investigated further. Following further investigation, a repair schedule can be completed.

Ares where the potential of the exterior laminate not being adhered to the core should be investigated further and repaired.

GENERAL NOTES

The vessels topsides are painted blue. There is no boot stripe and there is a blue antifoul paint on the bottom. The superstructure is painted white with a blue stripe. The vessel is powered by twin jet drives. The vessel is a commercial ferry and the paint systems are noted to be in a rough commercial finish.

The vessel's hulls are constructed using a sandwich type construction with a foam core of various densities. The laminates are reported as fiberglass with a kevlar ply included. The wing deck and superstructure are an aluminum construction. The vessels hulls were constructed by Concordia Yachts in Massachusetts and the vessel was assembled by Gladding -Hearn Shipbuilding of Massachsetts. The design was reported as Incat from Tasmania.

The interior of the vessel was viewed but not inspected during this inspection.

The vessel was reported to have been repaired in 2002 and 2007 due to ice damage to the hulls. The second repair was documented by Pedrick Design. Both the 2002 and 2007 repairs were reported to be close to the same location near the waterline at both the port and starboard inboard hulls. The first repair

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is indicated to have occurred by replacing the core and inner laminate and leaving the outer skin intact while working from the inside of the vessel. The second repair is indicated to have occurred by replacing the outer skin and core and leaving the inside laminate intact. The foam core used in the original construction in the area was reported as H80 and it was replaced with a higher density foam A1200.

M/V Flying Cloud

Moisture meter readings. The vessel was inspected using a Trimax capacitance type moisture meter and a GE Protimeter that uses radio frequency. High readings using both meters were found:

1. The forward areas on both port and starboard hulls above and below the waterline. From the bow and extending approximately 10 meters aft at the waterline are high readings.
2. High readings were noted approximately 9 meters aft at the waterline at the centerline on the port hull. Visible moisture is noted as seen dripping from a hairline fracture at a 25cm x 15cm location.
3. High readings were noted near the inboard trailing edge of the keel on the port hull.

The vessel was inspected acoustically. Acoustical testing of the hull was unremarkable except in areas that correlate with Thermal Infrared anomalies that are characteristic of separation of the outer laminate from the core.

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THERMAL INFRARED INSPECTION

Prior Repairs

1. Starboard hull inboard topsides aft. Approximately 4' x 4'. The repair is intact. Generous amounts of fairing noted.
2. Starboard hull inboard waterline repair.
    a. The first repair was reported to be in 2002 and is just aft of the bow and extending to the leading edge of the second repair. Noted below with anomalies.
    b. The second repair was reported to have been done in 2007. The repair is reported to be approximately 9.7 meters x 0.67meters. This large repair is intact.
3. Starboard hull inboard fuel tank repair. The location was reported to have been an area that was removed for the replacement of the fuel tanks and repaired in 2007. The repair is intact.
4. Starboard hull inboard forward topsides forward. The repair is intact.
5. Starboard hull outboard topside forward. The repair is intact.
6. Port hull inboard waterline repair. The second repair reported to have been done in 2007. The size of the repair is approximately 12.6meters x 0.67meters. The repair is intact.
7. Port hull inboard fuel tank repair. The location was reported to have been an area that was removed for the replacement of the fuel tanks and repaired in 2007. The repair is intact.
8. Port hull outboard topsides repair. Located at the bow. The repair is intact.
9. Port hull outboard topsides repair. Located aft. The repair is intact.

Anomalies

1. The starboard hull outboard bottom shows the following anomalies:
    a. Four anomalies in light color that are characteristic of separation of the outer laminate from the core. Located approximately 220-250cm forward of the trailing edge of the keel. Anomalies are approximately 15-24cm in diameter.
    b. One anomaly approximately 30cm in diameter in light color that is characteristic of separation of the outer laminate from the core. Located approximately 540cm forward of the trailing edge of the keel.

2. The starboard hull inboard bottom shows the following anomalies:
    a. The first repair near the bow at the waterline shows numerous small anomalies with characteristics of poor adhesion of the outer laminate to the core.
    b. An anomaly approximately 20cm in diameter at the bow with characteristics of separation of the outer laminate from the core.

3. The starboard hull stern
    a. The solid laminate at the stern. 5 small light colored anomalies approximately 4-8cm in diameter with characteristics of a void in the laminate.

4. The port hull outboard bottom shows the following anomalies:
    a. No Findings

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5. The port hull inboard bottom shows the following anomalies:
    a. An area approximately 40cm x 15cm with dark and light colored anomalies located approximately 1 meter forward of the trailing edge of the keel with characteristics of moisture ingress and separation of the outer laminate from the core.
    b. An area approximately 8 meters aft of the bow near the centerline with dark colored anomalies with characteristics of moisture ingress. The area extends outboard into the topsides with the cross cuts in the foam having characteristics of moisture ingress. This area differs from the starboard hull inboard as the location uses cross cut foam and the same location on the starboard hull does not.
    c. The bow area has approximately 3x light colored anomalies averaging 30 cm in diameter with characteristics of separation of the laminate from the core.
    d. A fracture approximately 15cm long at the chine near the bow. With anomalies characteristic of moisture ingress around it.

In addition to the possibility of previously repaired fractures, moisture ingress points to the core may be from the inside laminate if water has resided in the bilges. The Pedrick report notes that the second repair due to ice damage had to have laminate installed in the inside of the vessel as they were unable to get a vacuum for the repair as the inside laminate was found to be porous.

The metal guards for the jet unit at the sterns and the skegs on the bottom aft are bolted onto the vessel and are installed in plain foam with no core termination. No concerns are noted.

The through hulls in the topsides are in plain foam with no core termination surrounding them. No concerns are noted.

The hull is constructed of fiberglass laminates and a foam core. The core kerfs and core panel edges are seen in the images.

The locations of the high readings found using the moisture meters were examined.

Additional laminate is seen on centerline on both hulls.

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THERMAL IMAGES

IMAGE 1. Starboard Hull inboard aft

The plain foam core is seen in the image. Core panel edges are seen in dark color. No findings are noted. A ladder is seen in the left of the image. The jet bucket guard is seen in the top right of the image.

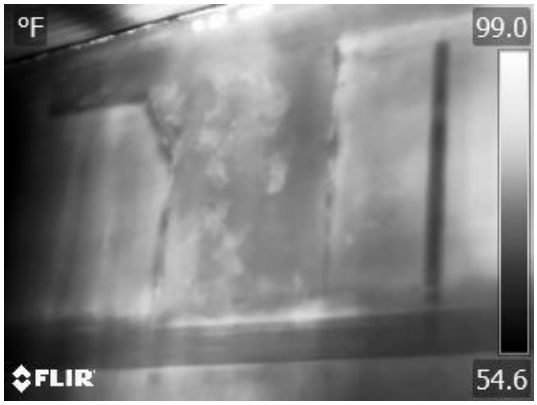

IMAGE 2. Starboard Hull inboard aft

A repair is seen in dark color with generous amounts of fairing.

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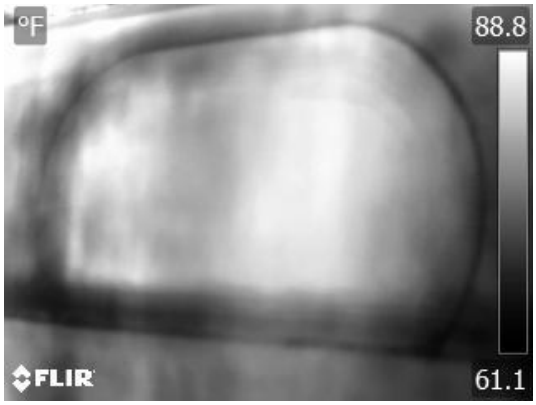

IMAGE 3. Starboard Hull inboard

Repaired area following the removal and installation of fuel tank. Plain foam core. The bottom of the image shows another repair near the waterline reported as ice damage. The repairs are intact. Scarfing of the laminate is seen.

IMAGE 4. Starboard Hull inboard

Repair reported as ice damage seen at waterline in bottom of image. Repairs are seen at the top of the image. The repairs are intact.

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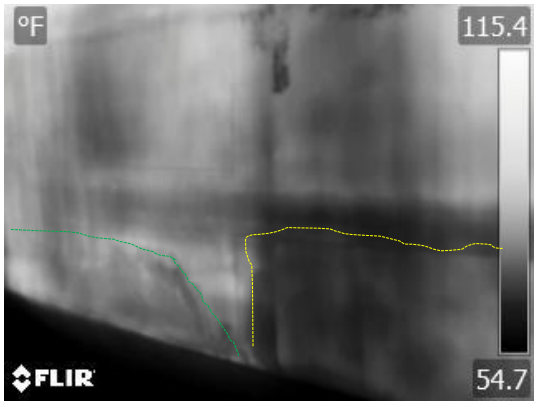

IMAGE 5. **Starboard Hull inboard**

The 2007 ice damage repair ends at the bottom right of image and is noted with a yellow line. A separate 2002 repair is seen in the left of the image and is noted with a green line.

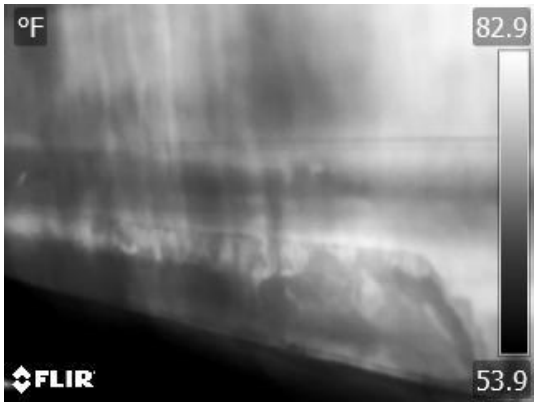

IMAGE 6. Starboard Hull inboard forward

A separate 2002 repair from the one aft is seen in the image. Small light colored anomalies are seen with characteristics of poor adhesion of the outer laminate to the core.

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IMAGE 7. Starboard Hull inboard forward

A past repair is seen in dark color in the right of the image. Core panel edges are seen in dark color.

IMAGE 8. Port Hull inboard aft

The 2007 ice damage repair at the waterline can be seen in the bottom of the image. Scarfing of the laminates is seen. Core panel edges in the plain foam are seen in dark color. A through hull is seen in the top left of the image. No core termination is seen around the through hull.

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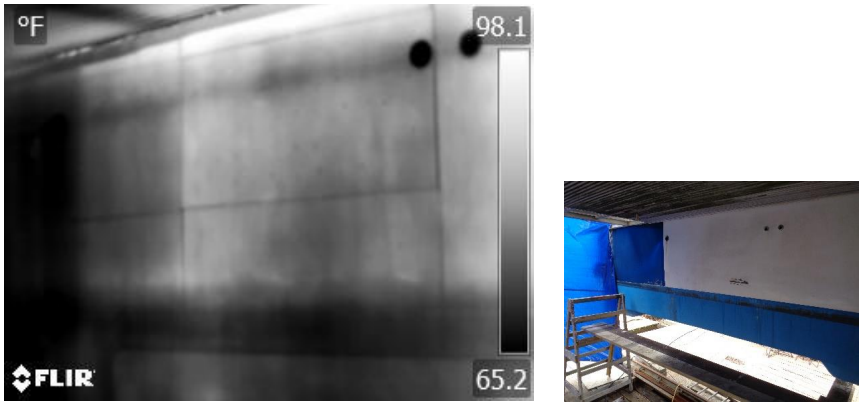

IMAGE 9. Port Hull inboard aft

Through hulls in plain foam. There is no core termination surrounding the through hulls. No findings are noted.

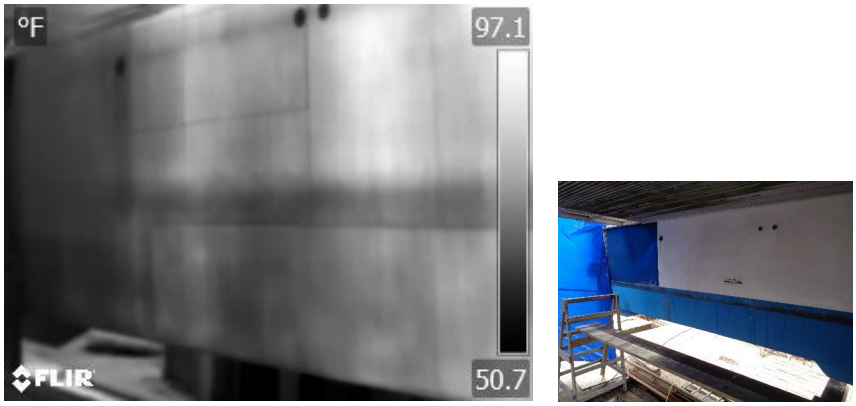

IMAGE 10. Port Hull inboard aft

The trailing end of the 2007 ice damage repair near the waterline is seen in the bottom of the image. No findings are noted. Core panel edges are seen in dark color

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IMAGE 11. Port Hull inboard

Repaired area following the removal and installation of fuel tank. Plain foam core. The bottom of the image shows the 2007 ice repair near the waterline. Scarfing of the laminates is seen at the repairs. No findings are noted.

IMAGE 12. Port Hull inboard

Repair for the fuel tank leading edge is in the left of the image. The 2007 ice damage repair at the waterline is at the bottom of the image. The plain foam core panel edges are seen in dark color. Scarfing of the laminates is seen at the repair. Core panel edges are seen in dark color. Fill at the chine area is seen in dark color. No

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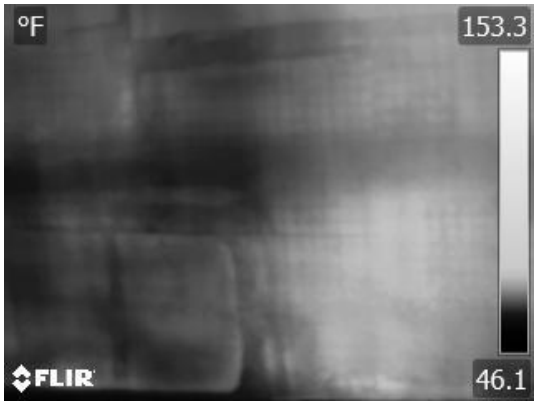

IMAGE 13. Port Hull inboard

The waterline repair made with plain foam ends in the bottom of the image. Cross cut foam is seen in location differing from the construction of the starboard hull.

IMAGE 14. Port Hull inboard forward

Dark colored anomalies characteristic of moisture ingress are seen in the location of the cross cut foam core.

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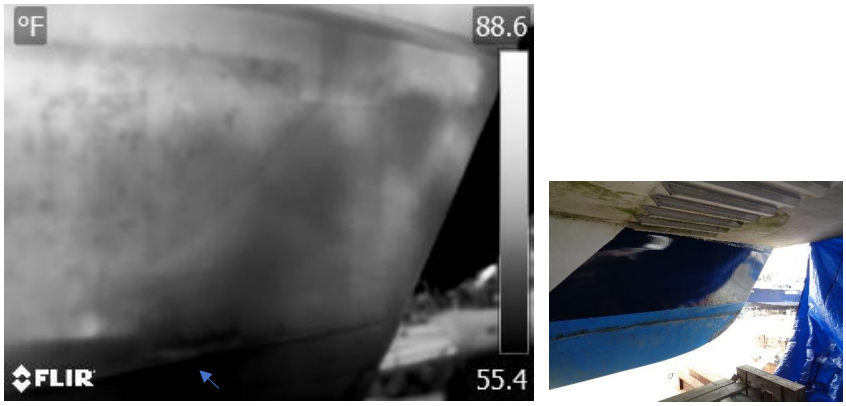

IMAGE 15. Port Hull inboard forward

Damage at the chine in dark color is noted with a blue arrow.

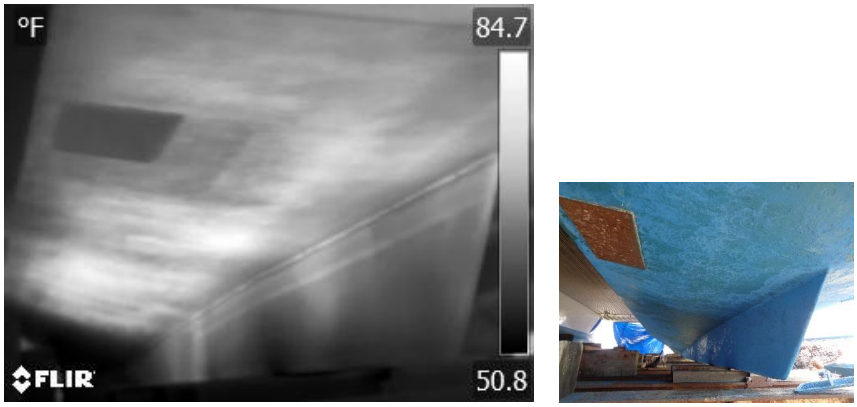

IMAGE 16. Starboard hull aft inboard bottom

A grounding plate is seen in the image on the left. The grounding plate is installed in a monolithic area of dark colored laminate. The trailing edge of the keel is seen in the left of the image. No findings are noted.

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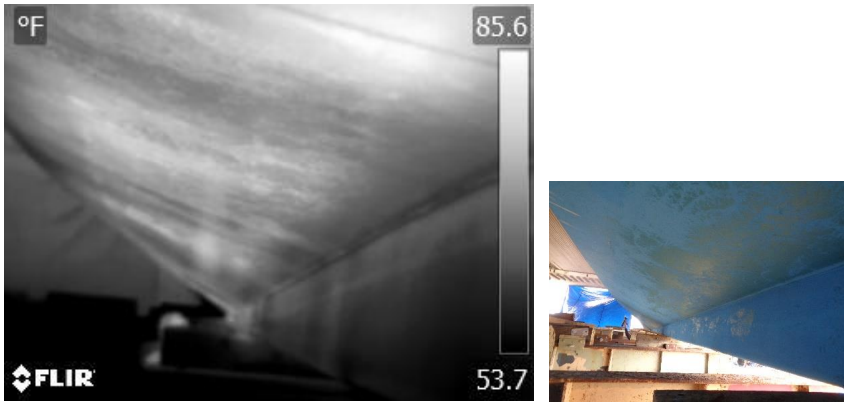

IMAGE 17. Starboard hull mid inboard bottom

The keel is seen in the right of the image. The image is taken looking forward. No findings are noted.

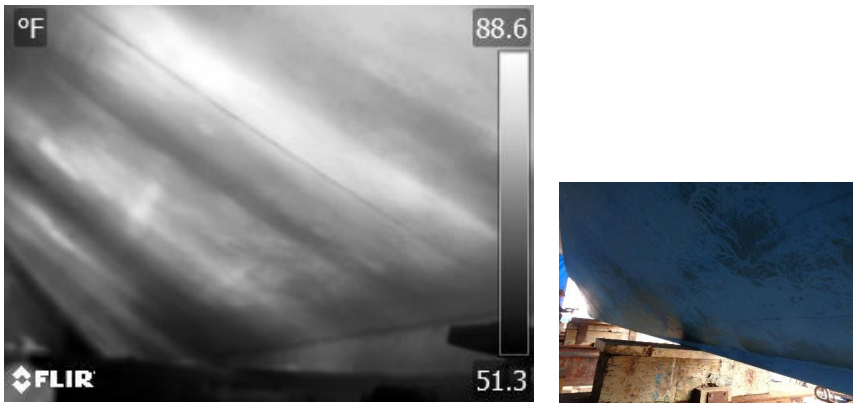

IMAGE 18. Starboard hull forward inboard bottom

The leading edge of the keel is seen in the bottom of the image. Core panel edges are seen in dark color. No findings are noted.

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IMAGE 19. Starboard hull forward inboard bottom

The blue arrow notes a light colored anomaly characteristic of a void between the core and the outer laminates

IMAGE 20. Starboard hull aft outboard bottom

A bolted on skeg is seen in the right of the image. The jet intake is seen in dark color in the left of the image. No findings are noted.

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IMAGE 21. Starboard hull aft outboard bottom

The jet intake is seen in the left of the image with monolithic laminate in dark color around it. A sea water intake is seen in the right of the image. The trailing edge of the keel is seen at the bottom of the image. No findings are noted.

IMAGE 22. Starboard hull aft outboard bottom

Four anomalies in light color with characteristics of separation of the outer laminate from the core are marked with blue arrows.

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IMAGE 23. Starboard hull aft outboard bottom

One anomaly in light color with characteristics of separation of the outer laminate from the core are marked with a blue arrow.

IMAGE 24. Starboard hull outboard bottom

An anomaly in light color with characteristics of separation of the outer laminate from the core are marked with a blue arrow.

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IMAGE 25. Starboard hull outboard bottom forward

The image is taken just forward of the leading edge of the keel. No findings are noted.

IMAGE 26. Starboard hull outboard bottom forward

Monolithic laminate is seen at the bow at centerline in dark color. No findings are noted.

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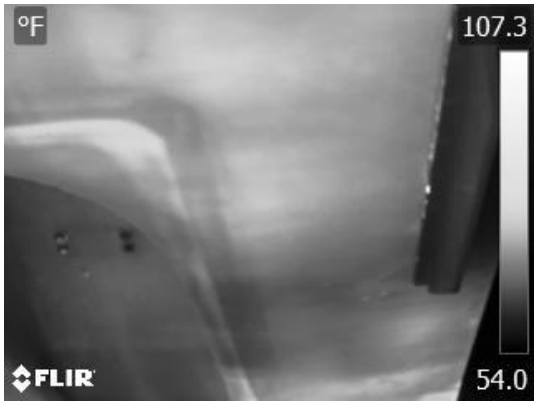

IMAGE 27. Port Hull aft inboard bottom FT

A bolted on skeg is seen in the right of the image. The jet intake is seen in dark colored solid laminate in the left of the image.

IMAGE 28. Port Hull aft inboard bottom

The jet intake is seen in the left of the image. The seawater intake is seen in the lower left of the image. A grounding plate is seen in the bottom right. The trailing edge of the keel is seen in the bottom of the image. No findings are noted.

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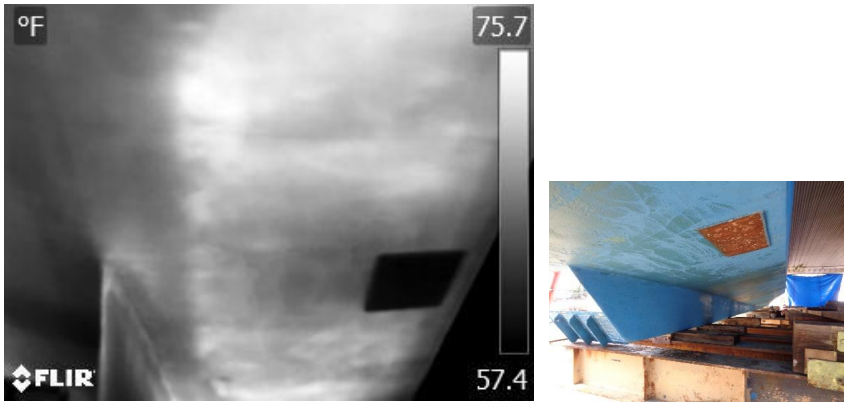

IMAGE 29. Port Hull aft inboard bottom

The trailing edge of the keel is seen in the left of the image. A bonding plate is seen in the right of the image. Additional laminate at centerline is seen in dark color. No findings are noted.

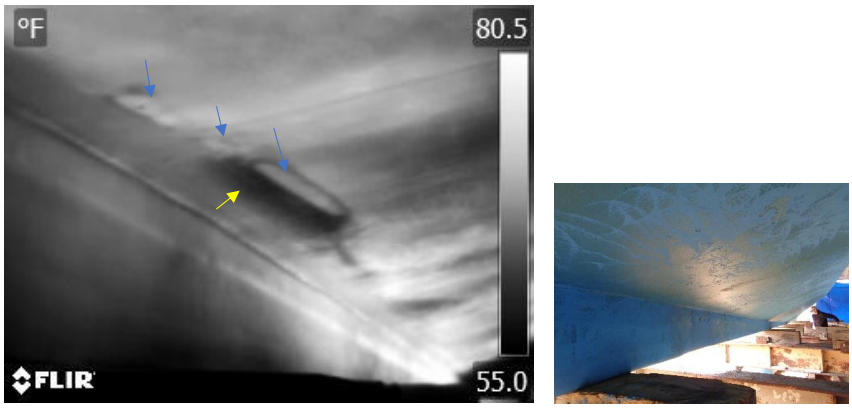

IMAGE 30. Port Hull inboard bottom

Three anomalies in light color with characteristics of separation of the outer laminate from the core are marked with blue arrows. The yellow arrow notes a dark colored anomaly characteristic of moisture ingress to the laminate.

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IMAGE 31. Port Hull inboard bottom

Core panel edges are seen in dark color. The keel is seen at the bottom of the image. No findings are noted.

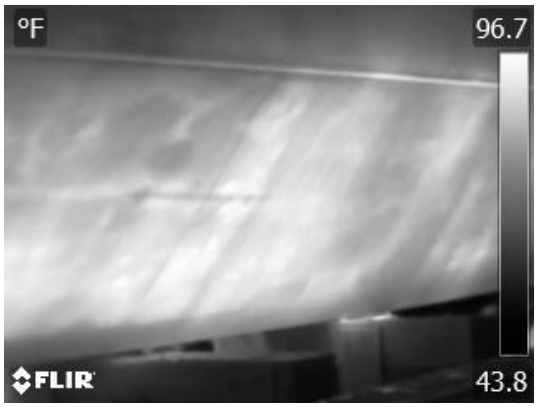

IMAGE 32. Port Hull inboard bottom

Core panel edges are seen in dark color. The chine is seen at the top of the image. No findings are noted.

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IMAGE 33. Port Hull inboard bottom

Anomalies near centerline with characteristics of moisture ingress are noted with a blue arrow in dark color

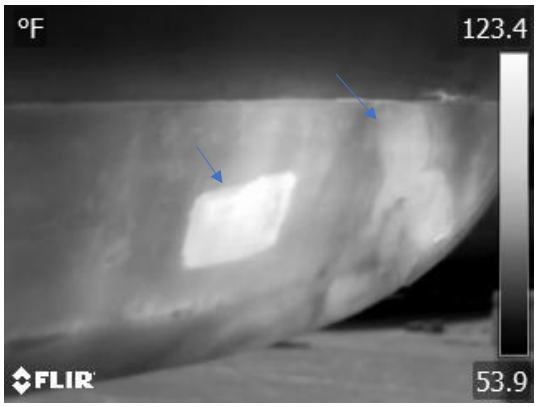

IMAGE 34. Port Hull inboard bottom forward

Blue arrows not anomalies in light color with characteristics of separation of the outer laminate from the core.

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IMAGE 35. Port hull aft outboard bottom

The jet intake is seen in the right of the image in monolithic laminate. The outboard skeg is seen in the left of the image in dark color. No findings are noted

IMAGE 36. Port hull aft outboard bottom

A dark colored area of solid laminate is seen outboard of the jet intake. The jet intake is seen in the right of the image. No findings are noted.

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IMAGE 37. Port hull outboard bottom

The leading edge of the keel is seen in the image. Core panel edges are seen in dark color. No findings are noted.

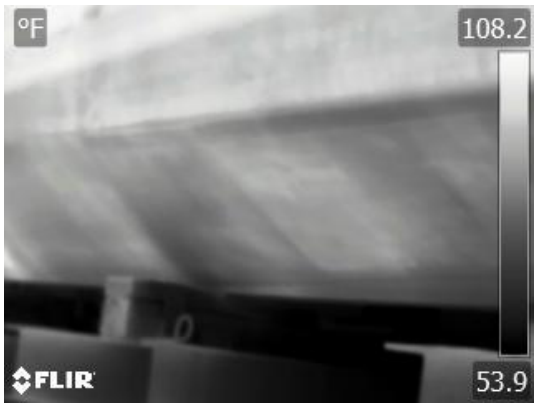

IMAGE 38. Port hull outboard bottom

The leading edge of the keel is seen in the image. No findings are noted.

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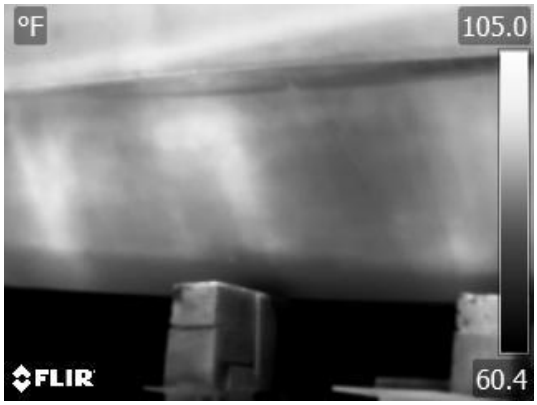

IMAGE 39. Port hull outboard bottom

The chine is seen in the top of the image. No findings are noted.

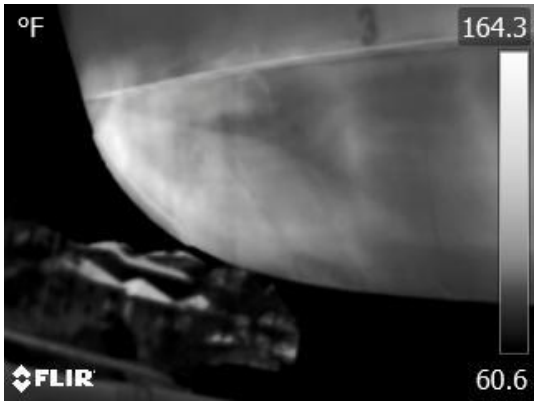

IMAGE 40. Port hull outboard bottom

The bow is seen in the image. No findings are noted.

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IMAGE 41. Port hull aft outboard topsides

A past repair is seen in the image in dark color and is noted with a blue arrow.. The metal guard for the jet bucket is seen in dark color in the right of the image.

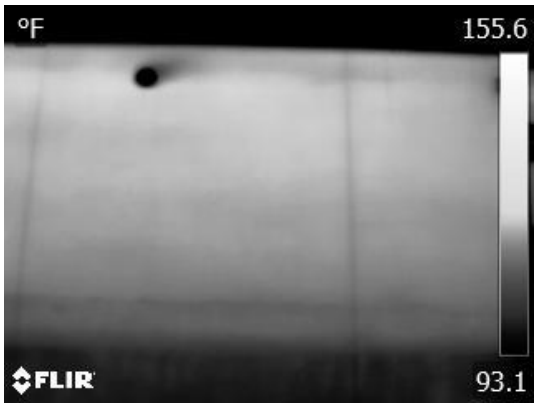

IMAGE 42. Port hull aft outboard topsides

A through hull is seen in the top of the image. Core panel edges are seen in dark color. No findings are noted.

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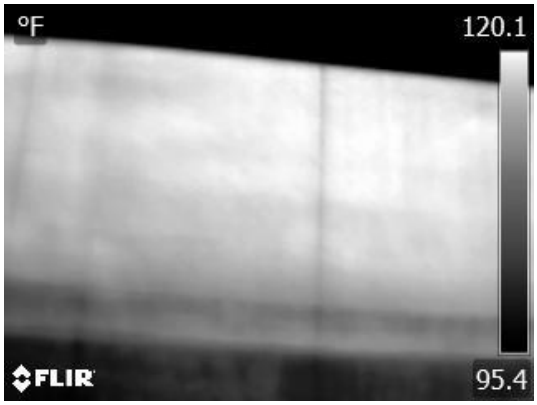

IMAGE 43. Port hull outboard topsides

The core panel edges are seen in dark color. No findings are noted.

IMAGE 44. Port hull outboard topsides

The core panel edges are seen in dark color. No findings are noted.

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IMAGE 45. Port hull outboard topsides

The core panel edges are seen in in dark color. No findings are noted

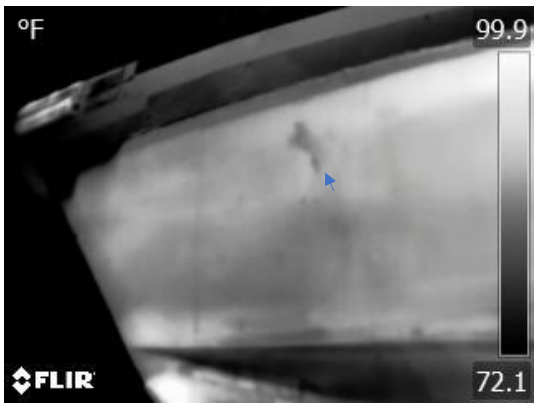

IMAGE 46. Port hull outboard topsides

The bow is seen in the left of the image and is noted with a blue arrow. A past repair is seen in dark color in the topsides. The repair is intact. No findings are noted.

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IMAGE 47. Starboard hull aft outboard topsides

The metal jet bucket guard is seen in the left of the image. No findings are noted.

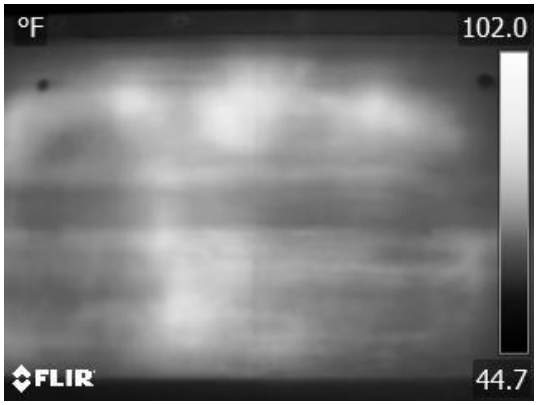

IMAGE 48. Starboard hull aft outboard topsides

A through hull s seen in the top left of the image. No findings are noted.

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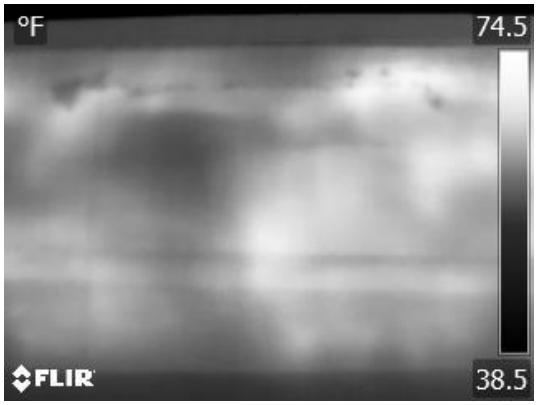

IMAGE 49. Starboard hull aft outboard topsides

Previous repairs are seen at the top of the image in the image in dark color. The repairs are intact. No findings are noted.

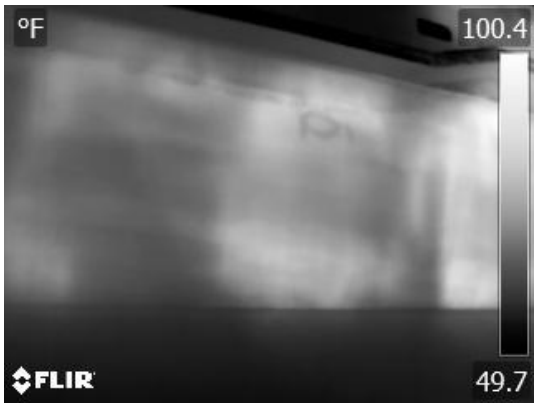

IMAGE 50. Starboard hull aft outboard topsides

Previous repairs are seen at the top of the image in the image in dark color. The repairs are intact. No findings are noted.

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IMAGE 51. Starboard hull aft outboard topsides

The bow is seen in the right of the image. No findings are noted.

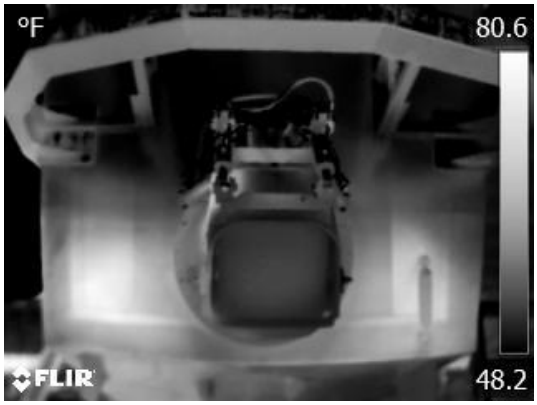

IMAGE 52. Port hull stern

The jet is seen mounted in monolithic laminate in dark color. A zinc anode is seen in the right of the image. The jet bucket guard is seen in the top of the image. No findings are noted

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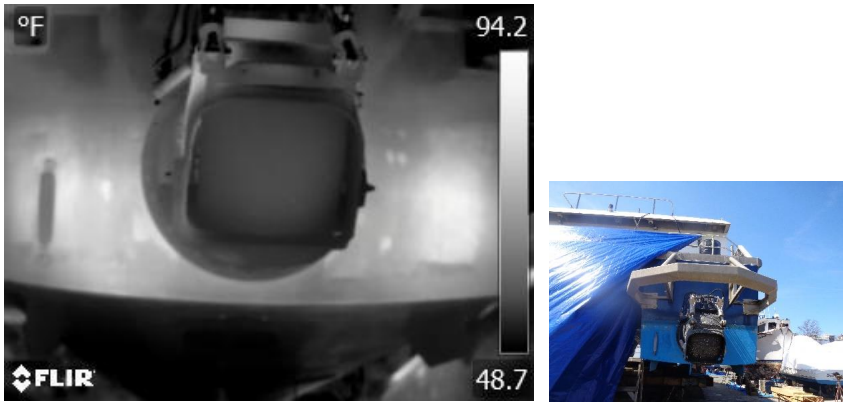

IMAGE 53. Starboard hull stern

The jet is seen mounted in monolithic laminate in dark color. Small anomalies characteristic of voids in the laminate are seen in light color.

END

These conclusions are subject to amendment if information provided by further destructive testing becomes available.

This report is to be adjudged as an opinion and does not in any way guarantee or warrant the condition of the yacht or its parts.

If you have any questions, or we may be of any further assistance please call.

Submitted without prejudice,

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